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09/748,384	12/27/2000	Akira Oosawa	Q61247	3796

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Washington, DC 20037-3202

EXAMINER
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TABATABAI, ABOLFAZL

ART UNIT	PAPER NUMBER
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2624

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10/26/2007

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

# Office Action Summary

Application No.

09/748,384

Applicant(s)

OOSAWA, AKIRA

Examiner

Abolfazl Tabatabai

Art Unit

2624

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE \_\_\_\_ MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 20 August 2007.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-63 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-63 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 27 September 2000 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
  - 2) ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_.

## **Request for Continued Examination**

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on August 20, 2007, has been entered.

### **Response to Amendments/Arguments**

2. In remarks, applicants argued in substance that, Kano does not teach or suggest that two or more inter processed images are arranged or switched.

3. However, in response to Applicant's argument, Examiner would like to point out that claim language is given its broadest reasonable interpretation. The specification is not measure of invention. Therefore, limitations contained therein cannot be read into the claims for the purpose of avoiding the prior art. *Ir re Spork*, 55CCPA 743, 386 F. 2d 924, 155 USPQ 687 (1968). In the instant case, Kano clearly reads " the detection of interval changes between a pair of temporally sequential medical images using a nonlinear wrapping technique in order image registration between the two images based on the determination of mapping shift values, which values represent the result of a local matching technique applied to a number of small ROIs in the two temporally sequential images (please note, to column 2, lines 20-37) " as two or more inter processed images are arranged or switched.

4. In remarks, applicants argued in substance that, Kano does not teach or suggest two or more inter-image-processed images are arranged in a manner in which display

positions of structurally characteristic parts of said subject in said two or more inter-image-processed images are aligned.

5. However, in response to Applicant's argument, Examiner would like to point out that claim language is given its broadest reasonable interpretation. The specification is not measure of invention. Therefore, limitations contained therein cannot be read into the claims for the purpose of avoiding the prior art. *Ir re Spork*, 55CCPA 743, 386 F. 2d 924, 155 USPQ 687 (1968). In the instant case, Kano clearly teaches two or more inter-image-processed images are arranged in a manner in which display positions of structurally characteristic parts of said subject in said two or more inter-image-processed images are aligned (please note, to column 3, lines 7-17).

6. In remarks, applicants argued in substance that, Kano does not teach or suggest two or more inter-processed images to be arranged or switched and displayed.

7. However, in response to Applicant's argument, Examiner would like to point out that claim language is given its broadest reasonable interpretation. The specification is not measure of invention. Therefore, limitations contained therein cannot be read into the claims for the purpose of avoiding the prior art. *Ir re Spork*, 55CCPA 743, 386 F. 2d 924, 155 USPQ 687 (1968). In the instant case, Kano clearly teaches two or more inter-processed images to be arranged or switched and displayed (column 2, lines 20-37; Fig. 1, element 230 and column 14, lines 17-26).

8. In remarks, applicants argued in substance that, Kano does not teach or suggest acquisition of images in a time series manner, and using as a reference image the newest or oldest image in time series.

9. However, in response to Applicant's argument, Examiner would like to point out that claim language is given its broadest reasonable interpretation. The specification is not measure of invention. Therefore, limitations contained therein cannot be read into

the claims for the purpose of avoiding the prior art. *Ir re Spork*, 55CCPA 743, 386 F. 2d 924, 155 USPQ 687 (1968). In the instant case, Mori clearly teaches acquisition of images in a time series manner, and using as a reference image the newest or oldest image in time series (column 3, lines 48-55).

10. In remarks, applicants argued in substance that, Kano does not teach or suggest selection of from two original images from three or more original images.

11. However, in response to Applicant's argument, Examiner would like to point out that claim language is given its broadest reasonable interpretation. The specification is not measure of invention. Therefore, limitations contained therein cannot be read into the claims for the purpose of avoiding the prior art. *Ir re Spork*, 55CCPA 743, 386 F. 2d 924, 155 USPQ 687 (1968). In the instant case, Kano clearly reads " a pair of chest radiographic images, selection of number of small regions of interest and then the image registration using the selected region of interest (please note, to fig. 1B and column 5, lines 1-12) " as the pair of images are selected from three or more original images.

### **Claim Rejections - 35 USC § 102**

12. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

13. Claims 1-3, 7-10, 13-23, 26-28, 32-35, 38-40 and 47-56 are rejected under 35 U.S.C. 102(b) as being anticipated by Kano et al (U.S. 5,359,513).

Regarding claim 1, Kano discloses image-processing apparatus comprising the steps of:

performing inter-image processing on two original images (fig. 1B, elements 10; 20 and column 5, lines 1-12), constituting each of two or more pairs of original images selected from three or more original images taken of the same subject (fig. 1, element 130 and column 5, lines 1-12), which become objects of comparison (column 8, lines 50-53 and column 14, lines 1-21) and reading (fig. 1, element 125).

arranging, or switching in sequence (column 2, lines 22-37), and displaying two or more inter-image processed images generated by said inter-image processing (fig. 1, element 230 and column 14, lines 17-26).

Regarding claim 2, Kano discloses the image display method wherein said two or more inter-image-processed images are arranged in a manner in which display positions of structurally characteristic parts of said subject in said two or more inter-image-processed images are aligned (see abstract and column 3, lines 7-11).

Regarding claim 3, Kano discloses the image display method as set forth in claim 1, wherein said two or more inter-image-processed images are switched in sequence in a manner in which display positions of structurally characteristic parts of said subject in said two or more inter-image-processed images are registered (column 5, lines 1-12).

Regarding claim 7, Kano discloses the image display method as set forth in claim 2, wherein said two original images is selected as a reference image so that each of said inter-image-processed images is generated based on said image (column 13, lines 48-55).

Claims 8-10, and 32-34 are similarly analyzed as claim 7.

Regarding claim 13, Branson discloses the image display method as set forth in claim 1, wherein said inter-image processing is the process of performing subtraction between corresponding pixels in said two original images (column 12, lines 28-41).

Claims 14,15 are similarly analyzed as claim 13.

Regarding claim 16, Kano discloses inter-image processing is the process of registering positions of structural elements of said two original images (column 5, lines 24-30).

Claims 17 and 18 are similarly analyzed as claim 16.

Claims 19-21 are similarly analyzed as claim 13.

Claim 22, is similarly analyzed as claim 1.

Regarding claim 23, Kano discloses the image display method as set forth in claim 1, wherein said three or more images are medical radiation images (column 10, lines 8-10).

Regarding claim 26, Kano discloses image-processing apparatus comprising the steps of:

Image display means (fig. 1 element 230);

Inter-image processing means for performing inter-image processing on two original images (fig. 1B, elements 10; 20 and column 5, lines 1-12), constituting each of two or more pairs of original images selected from three or more original images taken of the same subject (fig. 1, element 130 and column 5, lines 1-12), which become objects of comparison (column 8, lines 50-53 and column 14, lines 1-21) and reading (fig. 1, element 125).

display-format setting means for causing said image display means to arrange, or switch in sequence (column 2, lines 29-37), and displaying two or more inter-image processed images obtained by said inter-image processing means (fig. 1, element 230 and column 14, lines 17-26).

Claim 27, is similarly analyzed as claim 2.

Claim 28, is similarly analyzed as claim 3.

Claims 32-35 are similarly analyzed as claim 8 above.

Claims 38-40 are similarly analyzed as claim 13.

Claim 47, is similarly analyzed as claim 22.

Claim 48, is similarly analyzed as claim 23.

Claims 49-52 are similarly analyzed as claims 1 and 26 above.

Regarding claim 53, Branson discloses the image display of claim 1, wherein the inter-image processing is automated (column 19, lines 19-27).

Claim 54, is similarly analyzed as claim 53.

Claim 55, is similarly analyzed as claim 1.

Claim 56, is similarly analyzed as claim 10.

### **Claim Rejections - 35 USC § 103**

14. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.



**15.** Claims 4-6, 11, 12, 24-25, 29-31, 36, 37, 41-46 and 57 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kano et al (U.S. 5,359,3513) in view of Mori (U. S. 4,858,129).

Regarding claim 4, Kano is silent about the specific details regarding three or more original images are taken in sequence in a time series manner.

In the same field of endeavor, however, Mori discloses x-ray CT apparatus comprises three or more original images are taken in sequence in a time series manner (column 3, lines 5-30).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to use images are taken in sequence in a time series manner as taught by Mori in the system of Kano because Mori provides Kano an improved system which permits changes over time in a portion of a dynamic scan image to be seen at glance, tomographic images are displayed continuously frame by frame at high speed, a plurality of reduced-scale tomographic images are simultaneously displayed on a screen (see column 1, lines 15-22).

Regarding claim 11, Kano is silent about the specific details regarding three or more original images are acquired in sequence in a time series manner, and said reference image is the newest or oldest in a time series.

In the same field of endeavor, however, Mori discloses x-ray CT apparatus comprises three or more original images are acquired in sequence in a time series manner, and said reference image is the newest or oldest in a time series (column 3, lines 48-55).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to use reference image is the newest or oldest in a time series as taught by Mori in the system of Kano because Mori provides Kano an improved system which permits changes over time in a portion of a dynamic scan image to be seen at glance, tomographic images are displayed continuously frame by frame at high speed, a plurality of reduced-scale tomographic images are simultaneously displayed on a screen (see column 1, lines 15-22).

Claims 5, 6, 12, 24, 25, 29-31, 36 and 37 are similarly analyzed as claim 4.

Claims 41-46 are similarly analyzed as claim 16.

Claims 36 and 57 are similarly analyzed as claim 11.

**16.** Claims 58-63 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kano et al (U.S. 5,359,3513) in view of Graeff et al (U. S. 4,736,398).

Regarding claim 58, Kano is silent about the specific details regarding the image display method of claim 1, wherein at least one interimag processed image is an energy subtraction.

In the same field of endeavor, however, Graeff discloses apparatus for the digital subtraction angiography in energy subtraction mode comprises image is an energy subtraction (column 1, lines 46-51).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to use energy subtraction as taught by Graeff in the system of Kano because Greff provides Kano an improved system for subtraction angiography in

energy subtraction mode, which avoids aforementioned disadvantageous and permits a substantially continuous imaging of patients.

Claims 59 and 60 are similarly analyzed as claim 58.

Regarding claim 61, Kano is silent about the specific details regarding the image display method of claim 1, wherein at least one interimag processed image is a digital subtraction angiography.

In the same field of endeavor, however, Graeff discloses apparatus for the digital subtraction angiography in energy subtraction mode comprises image is a digital subtraction angiography (column 1, lines 46-51).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to use digital subtraction angiography as taught by Graeff in the system of Kano because Greff provides Kano an improved system for subtraction angiography in energy subtraction mode, which avoids aforementioned disadvantageous and permits a substantially continuous imaging of patients.

Claims 62 and 63 are similarly analyzed as claim 61.

### **Other prior art cited**

17. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Taniguchi (U S 5,578,823) discloses a transmission electron microscope and method of observing element distribution by using the same.

Fujii et al (U S 5,594,768) disclose a laminograph and inspection and

repair device using the same

Ishihara et al (U S 6,110,123) disclose a region of interest setting apparatus for respiration monitoring and a respiration monitoring system.

Yonekawa (U S 6,504,897 B1) disclose a X-ray image radiographing system.

### **Contact Information**

18. Any inquiry concerning this communication or earlier communications from the Examiner should be directed to ABOLFAZL TABATABAI whose telephone number is (571) 272-7458.

The Examiner can normally be reached on Monday through Friday from 9:30 a.m. to 7:30 p.m. If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's supervisor, Bhavesh Mehta, can be reached at (571) 272-7453. The fax phone number for organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Abolfazl Tabatabai

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Patent Examiner

Technology Division 2624

October 25, 2007

*A. Talatalan*